

REMARKS

This Amendment is filed in response to the Office Action dated December 31, 2003. All objections and rejections are respectfully traversed.

Claims 1-36 are in the case.

Claims 14-36 were added to better claim the invention.

Claims 1, 2, 5, 6, and 11 were amended to better claim the invention.

At paragraph 2 of the Office Action the drawings were objected to as being informal. Enclosed herewith are formal versions of the drawing as originally filed. No new matter has been entered, and the drawings are believed to be in allowable condition.

At paragraph 3 of the Office Action, claims 1, 5, 12, and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Grossglauser et al., U.S. Patent No. 6,353,596 issued on March 5, 2002, hereinafter Grossglauser.

The present invention, as set forth in representative claim 1, comprises in part:

A computer network having improved reliability in data transmissions, comprising:

an interpreter in a switch for interpreting a special multicast address in a packet received by said switch, said switch in response to receipt of a packet having said special multicast address, replicating said packet by transmitting identical copies of said packet on a plurality of ports of said switch;

a first router for receiving a first copy of said packet having said special multicast address transmitted from a first port of said plurality of ports of said switch, and a second router for receiving a second copy of said packet having said special multicast address, said second packet transmitted by a second port of said plurality of ports of said switch;

a first plurality of subsequent routers connected to said first router along an intended path for said first copy of said packet, said intended path having a plurality of links, and ***said links assigned a low cost in a Link State Packet Routing sense***; and

a second plurality of routers connected to said second router along an intended path for said second copy of said packet, said intended path having a plurality of links, and ***said links assigned a low cost in a Link State Packet Routing sense, said first plurality of routers connected to said second plurality of routers by links having assigned high costs in a Link State Packet Routing sense.***

Grossglauser discloses a system and method for multipoint-to-multipoint multicasting. Grossglauser teaches multicasting to multiple end stations from a core router through a network tree. It also teaches of multicasting through trees, but with the option of selecting the shortest path. Grossglauser discusses the costs of these options, meaning either the cost resource-wise or monetarily speaking. It also suggests use of a multicast server for use in distributing multicast packets.

Applicant respectfully urges Grossglauser does not show Applicant's claimed novel "***said [first path] links assigned a low cost in a Link State Packet Routing sense and said [second path] links assigned a low cost in a Link State Packet Routing sense, said first plurality of routers connected to said second plurality of routers by links having assigned high costs in a Link State Packet Routing sense.***"

Applicant claims a method for replicating packets over multiple packet paths to improve network reliability. Applicant claims a novel method of assigning a low cost value to links along multiple desired paths, so that the Link State Packet routing will select only the low cost multiple desired paths. To maintain the separateness of the different paths, a high cost value is given to links that would connect the two paths together. Grossglauser does not address Link State Packet routing, or the cost values associated

with links and the protocol used to select the low cost paths over the high cost paths. Grossglauser also does not offer a solution involving the replication of packets over multiple packet paths to reach the same destination.

Applicant respectfully urges that the Grossglauser patent is legally insufficient to render the presently claimed invention obvious under 35 U.S.C. §103 because of the absence in the cited patent of Applicant's claimed novel ***"said [first path] links assigned a low cost in a Link State Packet Routing sense and said [second path] links assigned a low cost in a Link State Packet Routing sense, said first plurality of routers connected to said second plurality of routers by links having assigned high costs in a Link State Packet Routing sense."***

At paragraph 4 of the Office Action, claims 2-4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Baumgartner et al., U.S. Patent No. 5,138,614 issued on August 11, 1992, hereinafter Baumgartner.

The present invention, as set forth in representative claim 2, comprises in part:

A network device for forwarding voice packets on a computer network, comprising:

an input port for receiving said voice packet;

a plurality of output ports assigned for transmitting said voice packet out of said network device in the event that a received packet carries a special multicast address in a layer 2 destination address field of said received packet; and

a circuit to read said layer 2 destination address field of said received packet, and in the event that said special multicast address is found in said layer 2 destination address field of said received packet, to interpret said special multicast address as indicating that said received packet is said voice packet, and to transfer said voice packet to said plurality of output ports for transmission of replica packets of said voice packets through

different paths in said computer network, *said paths having a low cost, in a Link State Protocol (LSP) sense, said paths also having a high cost to links that would connect each of said different paths to each other, said high cost effectively maintaining a non-converging separateness between said different paths.*

Baumgartner discloses a transformation method for network conference connections, which teaches multicasting between multiple destinations. Baumgartner discusses the difference between single-media multicast, such as voice conferencing (with multiple end users), and multiple-media multicasting, such as a multi-party interactive debugger:

Applicant respectfully urges Baumgartner does not show Applicant's claimed novel "*said paths having a low cost, in a Link State Protocol (LSP) sense, said paths also having a high cost to links that would connect each of said different paths to each other, said high cost effectively maintaining a non-converging separateness between said different paths.*"

Again, Applicant claims a method for replicating packets over multiple packet paths to improve network reliability. Applicant claims a novel method of assigning a low cost value to links along multiple desired paths, so that the Link State Packet routing will select only the low cost multiple desired paths. To maintain the separateness of the different paths, a high cost value is given to links that would connect the two paths together. Baumgartner does not address Link State Packet routing, or the cost values associated with links and the protocol used to select the low cost paths over the high cost paths. Baumgartner also does not offer a solution involving the replication of packets over multiple packet paths to reach the same destination.

Applicant respectfully urges that the Baumgartner patent is legally insufficient to render the presently claimed invention obvious under 35 U.S.C. §103 because of the absence in the cited patent of Applicant's claimed novel ***"said paths having a low cost, in a Link State Protocol (LSP) sense, said paths also having a high cost to links that would connect each of said different paths to each other, said high cost effectively maintaining a non-converging separateness between said different paths."***

At paragraph 6 of the Office Action, claims 5-12 were rejected under 35 U.S.C. §112, first paragraph, because the metes and the bounds of the claims could not be assessed. Claim 5 has been amended, and is believed to be in allowable condition. Claim 12 depends upon claim 5, and is therefore believed to be in allowable condition.

At paragraph 7 of the Office Action, claims 6-11 were objected to by the Examiner, stating that they would be allowable if rewritten to include all of the limitations of the base claim and also rewritten to overcome the rejections set forth in paragraph 6 as stated above. Claim 6 has been rewritten in independent form to include the limitations of the currently amended claim 5, and is believed to be in allowable condition. Claims 7-11 depend upon claim 6, and are therefore believed to be in allowable condition.

All independent claims are believed to be in condition for allowance.


All dependent claims are believed to be dependent from allowable independent claims, and therefore in condition for allowance.

Favorable action is respectfully solicited.

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Please charge any additional fee occasioned by this paper to our Deposit Account
No. 03-1237.

Respectfully submitted,



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